

Introduction to Design-Build

January 9, 2018

Roger Millar, Secretary of Transportation

Safety


- Sign-in
- Who is CPR Qualified?
- AED
- Who will call 911?
- Evacuation
- Restrooms
- Breaks



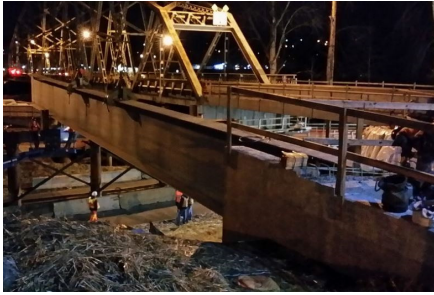

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Course Overview

- Why Design Build?
- What is the Design-Build Program?
- Which Project Delivery Model?
- How is Project Start Up and Procurement Different in DB?
- How is DB Contract Administration Different?
- How is Design Different in DB?
- How is Construction Different in DB?
- How is Document Control and Closeout Different in DB?


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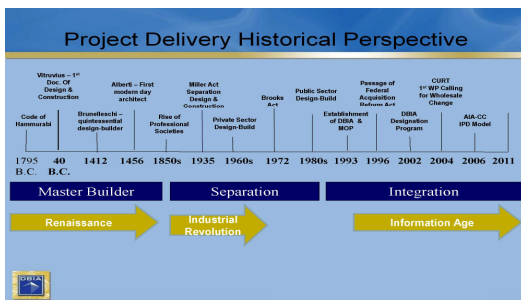
Why Design-Build?



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A Little History



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Enabling Legislation - WSDOT

- **RCW 47.20.780 – Design-Build Process**
 - (2001) Design Build Contracts >\$10M
 - (2015) Design Build Contracts > \$2M
- **RCW 47.20.785 - Qualified Design-Build Projects**
 - (2001) Design Build Contracts >\$10M
 - (2006) Design Build Pilot Projects (5) Between \$2M and \$10M
 - (2015) Design Build Contracts > \$2M

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JTC Recommendations

Major Topic Areas for Recommendations

1. Staffing and Career Development
2. Training
3. Programmatic Documents (policies and procedures)
4. Project Development
5. Project Delivery and Procurement
6. Performance Monitoring (Measurement)
7. Budgeting
8. Project Execution

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Benefits of Design-Build

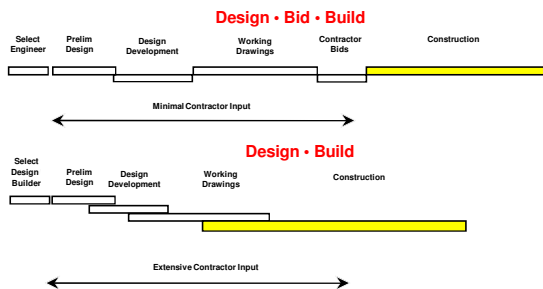


- Speed of Delivery
- Resources
- Early price certainty
- Innovative design/delivery
- Matching skill sets of contractor and designer
- Risk allocation
- Single point of responsibility
- Performance Based Selection

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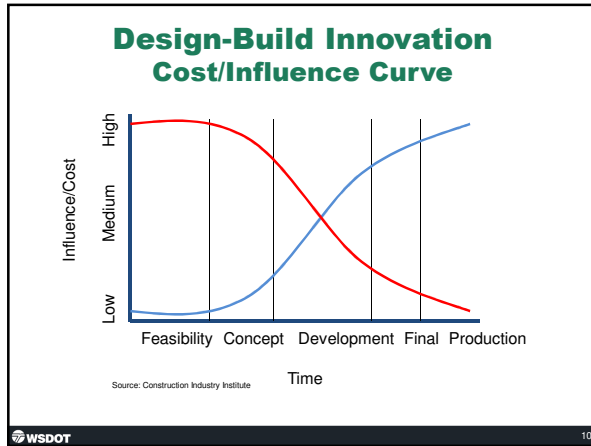
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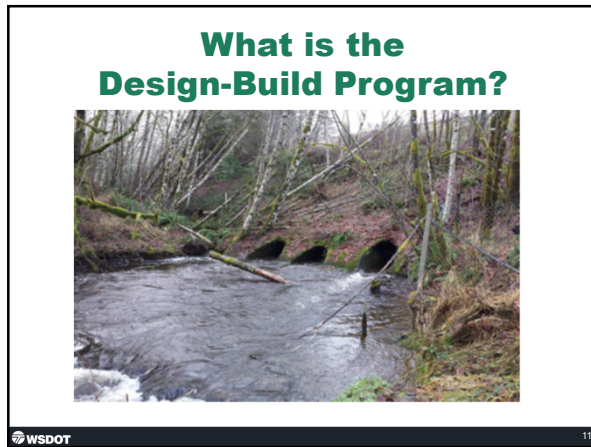
Design-Build Time Savings



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Design-Build Program-Past

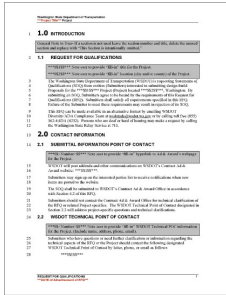
**GUIDEBOOK FOR
DESIGN-BUILD
HIGHWAY
PROJECT
DEVELOPMENT**

June 20, 2004

- Guidebook (2000)
- Various Guidance Statements (2006-2009)
- Desk Manual (2007)
- Templates (2008)
- Industry Workgroup
- First Project In 2001

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Design-Build Program-Present



- Centralized Design-Build Knowledge Base at HQ
- Approved DB Templates
- Approved DB Training Program
- Implementation of JTC Recommendations

Design-Build Program-Future ... what will it hold?



- Develop Design-Build Manual
- Update Documents
- Additional Training
- Consistency
- Maintain Industry Partnerships
- Develop Performance Metrics and Tracking System
- "Small" Design-Build Project Procurement

Headquarters Design-Build Contacts

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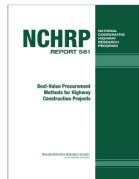
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HQ Support of DB Process

Question Type	Primary Support Group	Other Support Groups
RFQ, RFP development process	DBWG	ASCE, ASDE
Access to templates	DBWG	ASCE
Determining feasibility of DB as delivery method	ASDE	ASCE
General Procurement process	DBWG	ASCE, ASDE
Scope of work	ASCE	ASDE, DBWG
General template content/usage (RFQ, ITP, General Prov., Tech Req.)	DBWG	ASCE, ASDE
Project goals	ASCE	ASDE, DBWG
Project specific information to be included in RFQ/RFP Templates	ASCE	ASDE, OEO, DBWG
Content of RFP appendices	ASCE	ASDE, DBWG
SOQ, Proposal schedule	ASCE	DBWG, ASDE
SOQ, Proposal evaluation/scoring	ASCE	DBWG, ASDE
Organizational Conflicts of Interest	ASCE	DBWG
One-on-one meetings	ASCE	ASDE, DBWG
Alternative Technical Concepts	ASCE	ASDE, DBWG

Resources For Success

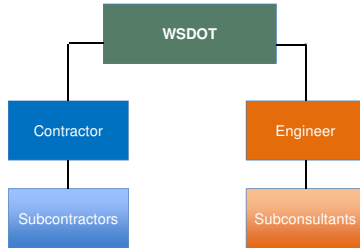
- Prior Work Products
- WSDOT Internal Design-Build Workgroup
- WSDOT/AGC/ACEC Design-Build Committee
- WSDOT Subject Matter Experts
- WSDOT Construction and Design Staff
- Other State DOTs
- Various Federal, State, and Academic Research Reports
- Design-Build Institute of America



Which Project Delivery Model?



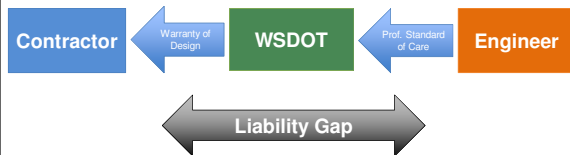
Design-Bid-Build Contract Structure



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DBB "Liability Gap"



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Design-Bid-Build

ADVANTAGES

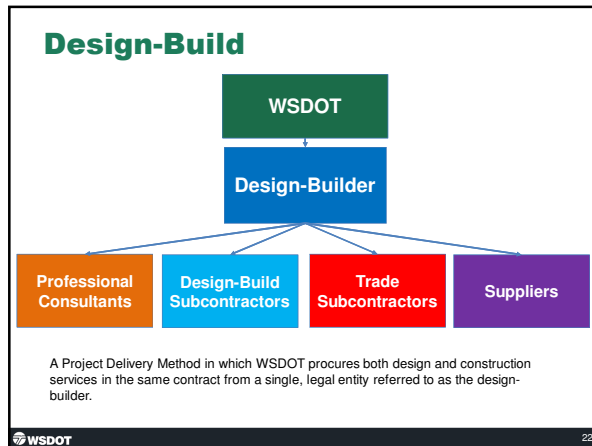
- Well established, familiar in law and suitable for competitive bidding
- Objective Contractor Selection
- Lowest initial price
- Clearly defined roles
- Designer works directly for owner

DISADVANTAGES

- Slower
- Owner must manage two contracts
- No Contractor involvement in design
- Initial low cost might not result in best value
- Greater potential for cost/time growth

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Design-Build

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> • Best Value Selection • Single point of responsibility • Encourages innovation • Lower design error risk • Time and often cost savings • Earlier cost and schedule certainty 	<ul style="list-style-type: none"> • Reduced owner control over design • Challenges with scoring technical evaluation factors • Potential higher initial cost • Parties assume different and unfamiliar risks

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Making the Mental Shift

Design-Build

- Integrated teams
- Highly collaborative
- Focused on trust
- Open and transparent communication
- Best value to the project

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Culture Shift

Keys to Success

- Co-location
- Formal and informal partnering
- Discipline task forces
- Shifting focus of the organization
 - Learning curve for everyone
- WSDOT maintains oversight



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Design-Build Risk Allocation Development

- Risk allocation developed in collaboration with the AGC/ACEC/WSDOT Design-Build Team.
- Goals:
 - Promote best practices in transportation
 - Support fair risk allocation developed in conjunction with industry input
 - Select the delivery method that is appropriate for each project
 - “Right size” the risk matrix for each project

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How is Project Start Up and Procurement Different in DB?



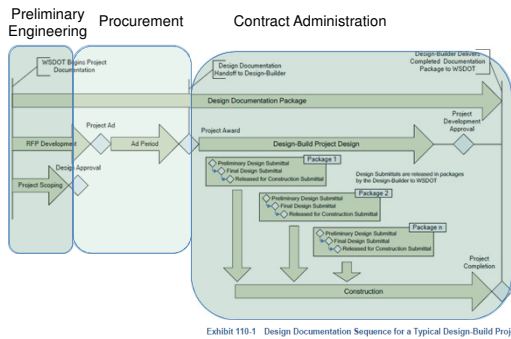
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Project Delivery Method Selection Guidance (“PDMSG”)

- Uniform system for determining appropriate delivery method
- Final PDM (project delivery method) determined during Project Definition Phase at approximately 10 – 30% design
- More information can be found at <http://www.wsdot.wa.gov/Projects/delivery/designbuild/PDMSG.htm>

3 Stages of Design Build



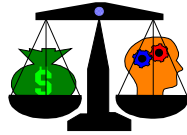
Conceptual Design

- **Basic Configuration**
 - Part of the Contract Documents
 - Proposers can rely on information
 - Proposals must be consistent with the Basic Configuration
- **Reference Documents**
 - Provides information to the Proposers to assist them in preparing Proposals
 - Designs (if any) are only to verify that Basic Configuration is constructible.

WSDOT DB Award Method

Selection Procedure

- Two-Step Selection (most typical)
 - Request for Qualifications
 - Request for Proposal
- Best-Value Award



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Project Goals

- Defined early in the project
- Reflect project's needs, objectives and benefits
- Defines the "target" for the design-build team
- The RFQ and the RFP should be drafted to maximize the likelihood of achieving the project's goals.



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Contract Documents vs. Reference

CONTRACT DOCUMENTS

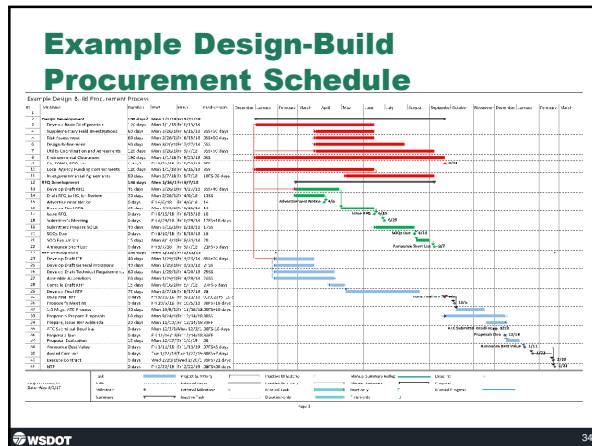
- Determine the mandatory minimums for project
- Limit "requirements" to project parameters
- Allow Proposers to innovate

REFERENCE

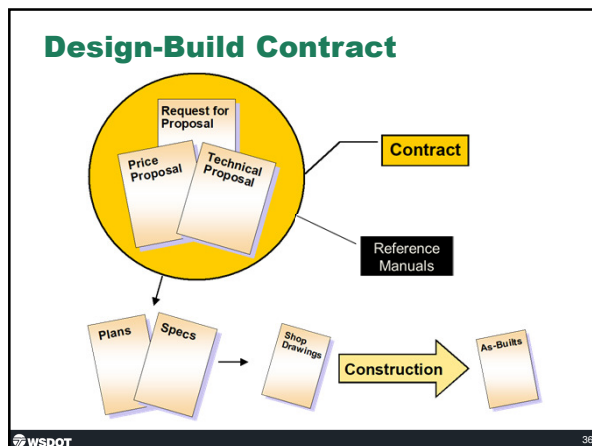
- Shifts risk to Proposer
- Useful information, but may be outdated
- Possible conflict with Contract Requirements

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Contract Structure

- **Chapter 1, General Provisions**
 - Replaces Division 1 of the Standard Specifications.
- **Chapter 2, Technical Requirements**
 - Consists of discipline-specific sections. Each section is typically broken out into the following subsections:
 - General / Scope
 - Mandatory Standards
 - Personnel Requirements
 - Design and Construction Criteria
 - Submittals

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Appendices

- **Appendix A1 – the go-to appendix.**
- **Conceptual Plans**
- **WSDOT (or other) Manuals**
- **Region Policies**
- **Discipline Reports**
- **Environmental Commitments**
- **Utility Agreements**
- **As-Builts**
- **ROW plans**

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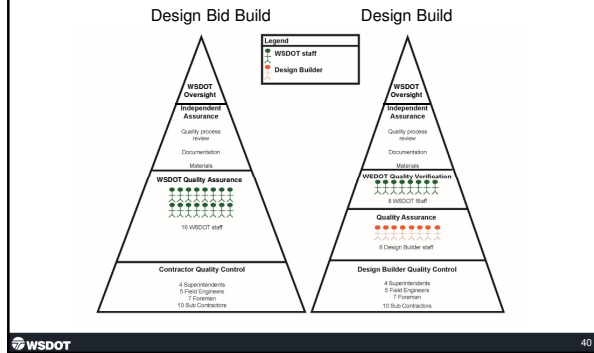
Order of Precedence

1. Change Orders
2. Design-Build Contract, excluding WSDOT Identified Betterments
3. WSDOT Identified Betterments
4. General Provisions (RFP Chapter 1)
5. Technical Requirements (RFP Chapter 2)
6. All other Contract Documents in RFP Appendix A1
7. Design-Builder's Proposal

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Staffing

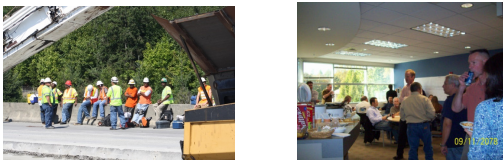


WSDOT Organization

- PE / Asst. PE
- Design Engineer
- Design Reviewers
- Office Engineer
- QV Manager
- QV-Materials Engineer

Co-Location

- Definition: locating both WSDOT and Design-Builder's staff in the same facility
- Extent varies by project
- Fosters collaboration and communication



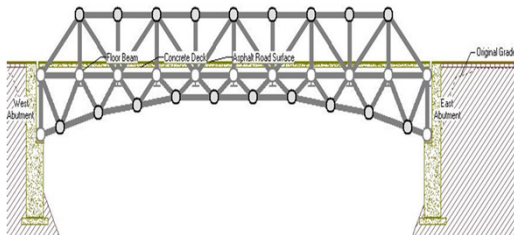
Office Administration

- Document Control
- Review and Approve QMP
- Materials/Record of Material
- Payment
- Change orders
- Federally Funded Projects

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How is Design Different in DB?



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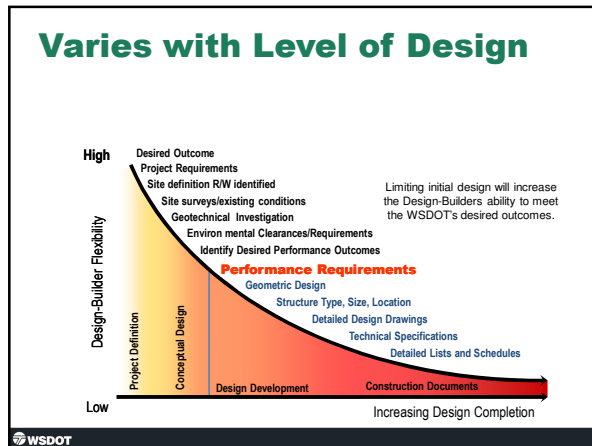
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Design-Builders Role in Design

- From (~30%) conceptual plans to 100% RFC plans.
 - Design Builder stamps the design
 - Design Builder owns risk of design errors
- Submits plan sets to WSDOT for Review and Comment (not approval).
- Construction starts before final design is complete
 - Not without Released For Construction plans

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As-Built Plans and Shop Drawings

- **Definition:**
 - Record of changes made to the Released for Construction (RFC) Documents
- **Revisions Supervised by Engineer of Record**
- **Submitted in Complete Package**
- **WSDOT Review**

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WSDOT Role in Design

- **Owns Basic Configuration elements.**
- **Provides oversight through Review and Comment:**
 - Meets the Contract Requirements
 - “Over the shoulder” reviews
 - Beware of preferences
 - Do not direct work
- **WSDOT accepts the design at the end of the project**

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Typical Review Process

- Preliminary, Final, RFC
- 14 day turnaround cycle
- WSDOT Design Manager compiles comments and checks for contract compliance
- DB sends comment responses
- Comment resolution meeting (all parties present)
- Over the shoulder review process



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How is Construction Different in DB?



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Design-Builder's Role in Construction

- Manage Construction
- Quality Control
- Quality Assurance
- Solve problems



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WSDOT Role in Construction

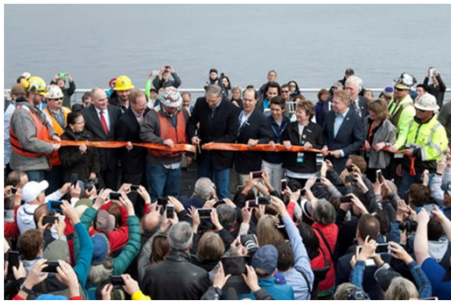
- Project Oversight
- Quality Verification
- Testing HMA
- Fabrication Inspection
- Independent Assurance



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How is Document Control and Closeout Different in DB?



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Contract File Index

- Essential tool
- Uniform for every project
- Administered by single person
- Tracks:
 - Design submissions, comments, and approvals
 - Submittals
 - Communications
 - Changes



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Submittals

What are you expecting in the first 30-45 days of the project?

- Draft Quality Management Plan
- Emergency Communication Plan
- DBE / MSVWBE Goal Implementation Plan
- Training or Apprentice plan
- Preliminary 90-day schedule/ Baseline Schedule
- First invoice
- Escrow Proposal Documents



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Submittals

After the first 45 days

- FHWA Form 1273 for all subs (Fed Aid only)
- Buy America materials documentation (if required)
- Training or Apprenticeship reporting/revisions
- Final Baseline Schedule



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Documentation and Files

- **Quality Management Plan (QMP)**
 - Document Control System
- **Design Document Package (DDP) and Project File (PF)**
 - Design Approval (DA)
 - Project Development Approval (PDA)
- **Project Deliverables Checklist**
- **Materials Documentation**
- **(Construction) Final Records**



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Resources

- WSDOT Design-Build Web Page
<http://www.wsdot.wa.gov/Projects/delivery/designbuild/Default.htm>
- Joint Transportation Committee of Washington State Legislature Design-Build Study
<http://leg.wa.gov/JTC/Pages/Design-Build-Study.aspx>
- WSDOT Design-Build Templates
<http://sharedot.eng/cn/hqconstr/dpb/DB%20Templates/Forms/AllItems.aspx>
- Design-Build Institute of America Best Practices
<https://www.dbia.org/resource-center/Pages/Best-Practices.aspx>
- Design-Build Institute of America Transportation Conference
www.dbia.org

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Questions